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=> s shrew and paralytic peptide and fragment

21 FILES SEARCHED...

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L1 12 SHREW AND PARALYTIC PEPTIDE AND FRAGMENT

=> dup rem

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PROCESSING COMPLETED FOR L1

L2 5 DUP REM L1 (7 DUPLICATES REMOVED)

=> d L2 1-5 ibib,abs

L2 ANSWER 1 OF 5 IFIPAT COPYRIGHT 2007 IFI on STN DUPLICATE 1

AN 11370247 IFIPAT;IFIUDB;IFICDB

TITLE: PARALYTIC PEPTIDE FOR USE IN  
NEUROMUSCULAR THERAPY

INVENTOR(S): Steeves; Bradley J., Riverview, CA  
Stewart; John M., Sackville, CA  
Vernes; Karl, Ferntree Gully, AU

PATENT ASSIGNEE(S): Unassigned

AGENT: SYNNESTVEDT & LECHNER, LLP, 2600 ARAMARK TOWER, 1101  
MARKET STREET, PHILADELPHIA, PA, 191072950, US

	NUMBER	PK	DATE
PATENT INFORMATION:	US 2007020251	A1	20070125
APPLICATION INFORMATION:	US 2006-507128		20060821

GRANTED PATENT NO.

	APPLN. NUMBER	DATE	OR STATUS
CONTINUATION OF:	US 2004-858233	20040601	7119168
CONTINUATION-IN-PART OF:	US 2003-716314	20031118	PENDING

	NUMBER	DATE
PRIORITY APPLN. INFO.:	US 2002-427682P	20021118 (Provisional)
FAMILY INFORMATION:	US 2007020251	20070125
	US 7119168	
DOCUMENT TYPE:	Utility	
	Patent Application - First Publication	
FILE SEGMENT:	CHEMICAL	
	APPLICATION	

#### PARENT CASE DATA:

This application is a continuation-in-part of U.S. application Ser. No. 10/716,314 filed on Nov. 18, 2003, which claims priority from U.S. application No. 60/427,682, filed Nov. 18, 2002, both of which are incorporated by reference herein in their entirety.

NUMBER OF CLAIMS: 15 17 Figure(s).

#### DESCRIPTION OF FIGURES:

FIG. 1. Amino acid sequences: A. (SEQ ID NO:1); B. (SEQ ID NO:2).  
 FIG. 2. Size exclusion chromatography of shrew submaxillary gland extract with bioactive fractions indicated by cross-hatching.  
 FIG. 3. SDS-PAGE analysis of shrew submaxillary gland extract. The small active component exists as part of a very high molecular weight complex.  
 FIG. 4. First HPLC elution profile of active fraction.  
 FIG. 5. Second HPLC elution profile of active fraction.  
 FIG. 6. SDS-PAGE gel of both buccal saliva and submaxillary homogenate stained for glycoproteins.  
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 FIG. 8. Capillary electrophoretogram of the isolated and purified shrew saliva peptide in sodium borate buffer.  
 FIG. 9. Capillary electrophoretogram of the isolated and purified shrew saliva peptide.  
 FIG. 10. Ultra-violet spectrum of the isolated and purified shrew saliva peptide.  
 FIG. 11. MALDI-TOF mass spectrum of the isolated and purified shrew saliva peptide.  
 FIG. 12. Peptide mass mapping of tryptic peptides of the isolated and purified \*\*\*shrew\*\*\* saliva peptide.  
 FIG. 13. MASCOT searching results of the MS/MS data from HPLCESI-Q-TOF analysis.  
 FIG. 14. Mealworms immediately post-injection and with total paralysis.  
 FIG. 15. Migration time vs isoelectric pH of Beckman-Coulter pI standard proteins.  
 FIG. 16. The increased fluorescence due to calcium ion uptake by ovarian carcinoma cell line OV-2008 and subsequent formation of the FURA/Ca<sup>2+</sup> in the absence (control) and presence of the paralytic shrew peptide soricidin after initial treatment with calcium chloride (to a final concentration of 2.5 mM), potassium chloride (to 20 mM) and a final calcium chloride (to a final concentration of 5.0 mM) treatments.  
 FIG. 17. The increased fluorescence due to calcium ion uptake by insect nerve tissue and subsequent formation of the FURA/Ca<sup>2+</sup> in the absence (control) and presence of the paralytic shrew peptide soricidin after a challenge with calcium chloride (to a final concentration of 2.5 mM) and potassium chloride (to 20 mM).

AB The invention relates to a low molecular weight peptide (or suite of related peptides) isolated from the submaxillary saliva glands of shrews of the species Blarina as a paralytic agent. This novel

paralytic agent is useful as a neuromuscular blocker and analgesic or as an insecticide.

CLMN 15 17 Figure(s).

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L2 ANSWER 2 OF 5 IFIPAT COPYRIGHT 2007 IFI on STN DUPLICATE 2

AN 11268241 IFIPAT;IFIUDB;IFICDB

TITLE: PARALYTIC PEPTIDE FOR USE IN  
NEUROMUSCULAR THERAPY

INVENTOR(S): Steeves; Bradley J., Riverview, CA  
Stewart; John M., Sackville, CA  
Vernes; Karl, Ferntree Gully, AU

PATENT ASSIGNEE(S): Unassigned

AGENT: SYNNESTVEDT & LECHNER, LLP, 2600 ARAMARK TOWER, 1101  
MARKET STREET, PHILADELPHIA, PA, 191072950, US

	NUMBER	PK	DATE
PATENT INFORMATION:	US 2006217302	A1	20060928
APPLICATION INFORMATION:	US 2003-716314		20031118

	NUMBER	DATE
PRIORITY APPLN. INFO.:	US 2002-427682P	20021118 (Provisional)
FAMILY INFORMATION:	US 2006217302	20060928
DOCUMENT TYPE:	Utility	
	Patent Application - First Publication	

FILE SEGMENT:

CHEMICAL  
APPLICATION

PARENT CASE DATA:

This application claims priority from U.S. application No. 60/ 427,682, filed Nov. 18, 2002, which is incorporated by reference herein in its entirety.

NUMBER OF CLAIMS: 28 14 Figure(s).

DESCRIPTION OF FIGURES:

FIG. 1. Amino acid sequences of isolated and purified shrew saliva protein: A. (SEQ ID NO:1); B. (SEQ ID NO:2)  
FIG. 2. Size exclusion chromatography of shrew submaxillary gland extract with bioactive fractions indicated by cross-hatching.  
FIG. 3. SDS-PAGE analysis of shrew submaxillary gland extract. The small active component exists as part of a very high molecular weight complex.  
FIG. 4. First HPLC elution profile of active fraction.  
FIG. 5. Second HPLC elution profile of active fraction.  
FIG. 6. SDS-PAGE gel of both buccal saliva and submaxillary homogenate stained for glycoproteins.  
FIG. 7. SDS-PAGE gel Coomassie stain of both buccal saliva and submaxillary homogenate.  
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FIG. 11. MALDI-TOF mass spectrum of the isolated and purified shrew saliva peptide.  
FIG. 12. Peptide mass mapping of tryptic peptides of the isolated and purified \*\*\*shrew\*\*\* saliva peptide.  
FIG. 13. MASCOT searching results of the MS/MS data from HPLCESI-Q-TOF analysis.  
FIG. 14. Mealworms immediately post-injection and with total paralysis.

AB The invention relates to a low molecular weight peptide (or suite of related peptides) isolated from the submaxillary saliva glands of shrews of the species Blarina as a paralytic agent. This novel paralytic agent is useful as a neuromuscular blocker and analgesic.

CLMN 28 14 Figure(s).

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analysis.

FIG. 14. Mealworms immediately post-injection and with total paralysis.

L2 ANSWER 3 OF 5 IFIPAT COPYRIGHT 2007 IFI on STN  
AN 04492702 IFIPAT;IFIUDB;IFICDB  
TITLE: PARALYTIC PEPTIDE FOR USE IN  
NEUROMUSCULAR THERAPY; ISOLATED FROM THE SUBMAXILIARY  
SALIVA GLANDS OF SHREWS; CALCIUM CHANNEL  
BLOCKER, ANALGESIC, INSECTICIDE  
INVENTOR(S): Steeves; Bradley J., Riverview, CA  
Stewart; John M., Sackville, CA  
Vernes; Karl, Ferntree Gully, AU  
PATENT ASSIGNEE(S): BioProspecting NB Inc., Sackville, CA  
PRIMARY EXAMINER: Carlson, Karen Cochrane  
ASSISTANT EXAMINER: Rooke, Agnes B  
AGENT: Synnestvedt & Lechner LLP

	NUMBER	PK	DATE
PATENT INFORMATION:	US 7119168	B2	20061010
	US 2005181992	A1	20050818
APPLICATION INFORMATION:	US 2004-858233		20040601
EXPIRATION DATE:	18 Nov 2023		

	APPLN. NUMBER	DATE	GRANTED PATENT NO. OR STATUS
CONTINUATION-IN-PART OF:	US 2003-716314	20031118	PENDING

	NUMBER	DATE
PRIORITY APPLN. INFO.:	US 2002-427682P	20021118 (Provisional)
FAMILY INFORMATION:	US 7119168	20061010
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted Patent - Utility, with Pre-Grant Publication	
	CHEMICAL	
	GRANTED	

#### PARENT CASE DATA:

This application is a continuation-in-part of U.S. application Ser. No. 10/716,314 filed on Nov. 18, 2003, which claims priority from U.S. application No. 60/427,682, filed Nov. 18, 2002, both of which are incorporated by reference herein in their entirety.

NUMBER OF CLAIMS: 20  
GRAPHICS INFORMATION: 13 Drawing Sheet(s), 15 Figure(s).

#### DESCRIPTION OF FIGURES:

FIG. 1. Amino acid sequences: A. (SEQ ID NO:1); B. (SEQ ID NO:2).  
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AB The invention relates to a low molecular weight peptide (or suite of related peptides) isolated from the submaxillary saliva glands of shrews of the species *Blarina* as a paralytic agent. This novel paralytic agent is useful as a neuromuscular blocker and analgesic or as an insecticide.

CLMN 20

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after a challenge with calcium chloride (to a final concentration of 2.5 mM) and potassium chloride (to 20 mM).

L2 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 2005:823304 CAPLUS

DOCUMENT NUMBER: 143:224069

TITLE: Paralytic peptide from  
shrew saliva, named PS peptide or soricidin,  
for use as neuromuscular blocker, analgesic, cosmetic  
or as an insecticide

INVENTOR(S): Stewart, John M.; Steeves, Bradley J.; Vernes, Karl

PATENT ASSIGNEE(S): Bioprospecting Nb Inc., Can.

SOURCE: U.S. Pat. Appl. Publ., 27 pp., Cont.-in-part of U.S.  
Ser. No. 716,314.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005181992	A1	20050818	US 2004-858233	20040601
US 7119168	B2	20061010		
US 2006217302	A1	20060928	US 2003-716314	20031118
US 2007020251	A1	20070125	US 2006-507128	20060821
PRIORITY APPLN. INFO.:			US 2002-427682P	P 20021118
			US 2003-716314	A2 20031118
			US 2004-858233	A1 20040601

AB The invention involves isolation and purification of a low mol. weight peptide paralytic agent from shrew (*Bravina brevicada*) submaxillary salivary gland or saliva (called "PS peptide" or soricidin). The peptide preferably has 54 amino acids (Seq ID NO: 1), and a mol. weight of about 6000 Da as measured by SDS-PAGE. The peptide may be isolated from any shrew having paralytic activity in its saliva, such as *Blarina*, *Neomys* and *Sorex* shrew species. The invention also optionally includes a toxicity bioassay using the common meal-worm or other insect for rapid assessment of paralytic bioactivity. This novel paralytic agent is useful as a neuromuscular blocker and analgesic or as an insecticide.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 5 BIOTECHDS COPYRIGHT 2007 THE THOMSON CORP. on STN  
DUPLICATE 4

ACCESSION NUMBER: 2004-15853 BIOTECHDS

TITLE: New shrew paralytic peptide  
isolated from the submaxillary glands of the *Blarina*  
shrew, useful as a neuromuscular blocker, or as an  
analgesic, and for treating migraine, muscle tremors,  
excessive sweating and wrinkles;  
involving vector-mediated gene transfer and expression in  
host cell

AUTHOR: STEWART J M; STEEVES B J; VERNES K

PATENT ASSIGNEE: STEWART J M; STEEVES B J; VERNES K

PATENT INFO: WO 2004046178 3 Jun 2004

APPLICATION INFO: WO 2003-CA1749 18 Nov 2003

PRIORITY INFO: US 2002-427682 18 Nov 2002; US 2002-427682 18 Nov 2002

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: WPI: 2004-431942 [40]

AN 2004-15853 BIOTECHDS

AB DERWENT ABSTRACT:

NOVELTY - A new isolated shrew paralytic

peptide (I): (a) having a molecular weight of 6000 Da as measured

by SDS-PAGE and a fully defined sequence of 54 amino acids (SEQ ID NO: 1 or 2) given in the specification; or (b) comprising a fragment of 5-10, 10-15, 15-20, or 20-24 amino acids of (a).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for: (1) a pharmaceutical composition or cosmetic composition including (I); (2) an isolated and purified multiprotein complex comprising (I) and having a molecular weight of greater than or equal to 600000 daltons; (3) dissociating (I) from the multiprotein complex of (2), comprising contacting the multiprotein complex with sodium docecylsulfate or aqueous alcohol or warming at 40degreesC; (4) an antibody to (I); (5) determining the potency of a paralytic agent, comprising administering the paralytic agent to a mealworm or other insect, determining the time until onset of paralysis and/or the duration of paralysis, where the time for onset of paralysis is inversely proportional to the strength of the paralytic agent and the duration of paralysis is proportional to the strength of the paralytic agent; and (6) a nucleic acid encoding (I).

BIOTECHNOLOGY - Preferred Peptide: (I) includes at least one cysteine amino acid having a sulfhydryl group, and further comprises at least 2 or 6 cysteine amino acids each having a sulfhydryl group and forming a disulfhydryl bond. (I) further has the property of absorbing light at 280 nm and stronger at 260 nm, and including at least one aromatic amino acid. (I) is isolated from a shrew submaxillary gland and/or shrew saliva, where the shrew submaxillary gland is isolated from Blarina brevicauda, Blarina carolinensis, Sorex unguiculatus, Sorex shinto saevu (Solenodon paradoxus), Neomys fodiens or Neomys anomalus. A 10 microliter dose of 20% (w/v) crude gland extract injected into a mealworm in an in vitro assay causes mealworm paralysis in less than 1 second, and a 10 microliter dose of 10% (w/v) crude gland extract injected into a mealworm in an in vitro assay causes mealworm paralysis in less than 10 seconds. (I) is in a purified form, and is purified at least 90%, 95% or 99%.

ACTIVITY - Analgesia; Antimigraine; Anticonvulsant; Dermatological; Vulnery. No biological data given.

MECHANISM OF ACTION - Neuromuscular Blocker.

USE - The isolated shrew paralytic peptide is useful as a pharmaceutical substance, neuromuscular blocker, or as an insect immobilizing agent. The peptide and compositions comprising the peptide are useful for treating migraine, myofacial and other types of pain, muscle tremors, neuromuscular diseases, excessive sweating; as analgesic for wounds; for reducing wrinkles; or as neuromuscular blocker (all claimed).

ADMINISTRATION - Routes of administration of the pharmaceutical compositions include oral, topical, aerosol, intramuscular, intraperitoneal, intravenous, subcutaneous, inhalation and intratracheal. No dosage given.

EXAMPLE - Experimental protocols are described but no results given. (47 pages)

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L1 12 S SHREW AND PARALYTIC PEPTIDE AND FRAGMENT  
L2 5 DUP REM L1 (7 DUPLICATES REMOVED)

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Connection closed by remote host



## Refine Search

### Search Results -

Term	Documents
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PEPTIDES	153914
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(L2 AND PEPTIDE ).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	7

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<u>L3</u>	L2 and peptide	7	<u>L3</u>
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<u>L1</u>	shrew	216	<u>L1</u>

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☐ 1. Document ID: US 20070020251 A1

L3: Entry 1 of 7

File: PGPB

Jan 25, 2007

PGPUB-DOCUMENT-NUMBER: 20070020251

PGPUB-FILING-TYPE:

DOCUMENT-IDENTIFIER: US 20070020251 A1

TITLE: Paralytic peptide for use in neuromuscular therapy

PUBLICATION-DATE: January 25, 2007

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Stewart; John M.	Sackville		CA
Steeves; Bradley J.	Riverview		CA
Vernes; Karl	Ferntree Gully		AU

US-CL-CURRENT: 424/94.1; 435/320.1, 435/325, 435/69.1, 530/324, 536/23.5

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">RMC</a>	<a href="#">Draw D</a>
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☐ 2. Document ID: US 20060217302 A1

L3: Entry 2 of 7

File: PGPB

Sep 28, 2006

PGPUB-DOCUMENT-NUMBER: 20060217302

PGPUB-FILING-TYPE:

DOCUMENT-IDENTIFIER: US 20060217302 A1

TITLE: Paralytic peptide for use in neuromuscular therapy

PUBLICATION-DATE: September 28, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Stewart; John M.	Sackville		CA
Steeves; Bradley J.	Riverview		CA
Vernes; Karl	Ferntree Gully		AU

US-CL-CURRENT: 514/12; 530/324

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw D
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## 3. Document ID: US 20050181992 A1

L3: Entry 3 of 7

File: PGPB

Aug 18, 2005

PGPUB-DOCUMENT-NUMBER: 20050181992

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050181992 A1

TITLE: Paralytic peptide for use in neuromuscular therapy

PUBLICATION-DATE: August 18, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Stewart, John M.	Sackville		CA
Steeves, Bradley J.	Riverview		CA
Vernes, Karl	Ferntree Gully		AU

US-CL-CURRENT: 514/12; 530/324

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw D
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## 4. Document ID: US 7119168 B2

L3: Entry 4 of 7

File: USPT

Oct 10, 2006

US-PAT-NO: 7119168

DOCUMENT-IDENTIFIER: US 7119168 B2

TITLE: Paralytic peptide for use in neuromuscular therapy

DATE-ISSUED: October 10, 2006

## PRIOR-PUBLICATION:

DOC-ID	DATE
US 20050181992 A1	August 18, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Stewart, John M.	Sackville			CA
Steeves, Bradley J.	Riverview			CA
Vernes, Karl	Ferntree Gully			AU

US-CL-CURRENT: 530/350

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw D
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☐ 5. Document ID: EP 1601691 A2

L3: Entry 5 of 7

File: EPAB

Dec 7, 2005

PUB-NO: EP001601691A2

DOCUMENT-IDENTIFIER: EP 1601691 A2

TITLE: SHREW PARALYTIC PEPTIDE FOR USE IN NEUROMUSCULAR THERAPY

PUBN-DATE: December 7, 2005

## INVENTOR-INFORMATION:

NAME

COUNTRY

STEWART, JOHN M

CA

STEEVES, BRADLEY J

CA

VERNES, KARL

AU

INT-CL (IPC): C07K 14/47; A61K 38/17

EUR-CL (EPC): C07K014/47

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	RIIC	Draw D
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☐ 6. Document ID: WO 2004046178 A2

L3: Entry 6 of 7

File: EPAB

Jun 3, 2004

PUB-NO: WO2004046178A2

DOCUMENT-IDENTIFIER: WO 2004046178 A2

TITLE: PARALYTIC PEPTIDE FOR USE IN NEUROMUSCULAR THERAPY

PUBN-DATE: June 3, 2004

## INVENTOR-INFORMATION:

NAME

COUNTRY

STEWART, JOHN M

CA

STEEVES, BRADLEY J

CA

VERNES, KARL

AU

INT-CL (IPC): C07K 14/435

EUR-CL (EPC): C07K014/47

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	RIIC	Draw D
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☐ 7. Document ID: US 20070020251 A1, WO 2004046178 A2, AU 2003283160 A1, US 20050181992 A1, EP 1601691 A2, AU 2003283160 A8, US 20060217302 A1, US 7119168 B2

L3: Entry 7 of 7

File: DWPI

Jan 25, 2007

DERWENT-ACC-NO: 2004-431942

DERWENT-WEEK: 200710

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TITLE: New shrew paralytic peptide isolated from the submaxillary glands of the Blarina shrew, useful as a neuromuscular blocker, or as an analgesic, and for treating migraine, muscle tremors, excessive sweating and wrinkles

INVENTOR: STEEVES, B J; STEWART, J M ; VERNES, K

PRIORITY-DATA: 2002US-427682P (November 18, 2002), 2003US-0716314 (November 18, 2003), 2004US-0858233 (June 1, 2004), 2006US-0507128 (August 21, 2006)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>US 20070020251 A1</u>	January 25, 2007		000	A61K038/43
<u>WO 2004046178 A2</u>	June 3, 2004	E	047	C07K014/435
<u>AU 2003283160 A1</u>	June 15, 2004		000	C07K014/435
<u>US 20050181992 A1</u>	August 18, 2005		000	A61K038/17
<u>EP 1601691 A2</u>	December 7, 2005	E	000	C07K014/47
<u>AU 2003283160 A8</u>	November 3, 2005		000	C07K014/47
<u>US 20060217302 A1</u>	September 28, 2006		000	A61K038/17
<u>US 7119168 B2</u>	October 10, 2006		000	C07K001/00

INT-CL (IPC): A61K 38/17; A61K 38/43; C07H 21/00; C07H 21/04; C07K 1/00; C07K 14/00; C07K 14/435; C07K 14/47; C07K 17/00; C12P 21/06

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Keywords	Drawings
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Term	Documents
PEPTIDE	211016
PEPTIDES	153914
(2 AND PEPTIDE) . PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD.	7
(L2 AND PEPTIDE ) . PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD.	7

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